

ABSTRACT OF THE DISCLOSURE

A Raman amplifier of the present invention includes a loss measuring unit (110) for measuring loss distribution of an object of measurement by OTDR based on reflected light with respect to
5 outputted test light; an optical coupler (114) in which the test light is supplied to a first input terminal thereof and one of output terminals thereof is connected to an optical fiber transmission line; a wavelength filter (116) inserted between the loss measuring unit (110) and the optical coupler (114); a
10 control circuit (200) for generating a control signal for reducing an error signal obtained by comparing a Raman gain obtained with a reference value; and an excitation light source (140) for changing an excitation light power based on the control signal.